

Those who only know Babbage's name in connexion with this matter, and imagine him to have been a mere peevish visionary, require to be told that no man ever more truly loved his kind, and that few men have devoted transcendent powers like his with such disinterestedness, such tenacity, and such noble self-sacrifice, to what he believed to be the profit and the elevation of humanity.

A. S.

CAPTAIN JAMES PALLADIO BASEVI, R.E., was a son of the celebrated architect who designed the Fitz-William Museum at Cambridge, and other important buildings, and lost his life by falling from the tower of Ely Cathedral while superintending the restoration of that edifice.

James Basevi was distinguished as a lad for more than ordinary talent, and for his mathematical abilities. After passing with great credit through Rugby, the Cheltenham College, and the Honourable East India Company's Military Seminary at Addiscombe, he obtained a commission in the Corps of Engineers as first of his term, and went out to India in the year 1853. Three years afterwards he was appointed to the Great Trigonometrical Survey of India, upon which he continued to serve up to the time of his death. He was particularly qualified for this branch of the public service, and his excellent abilities being associated with remarkable powers of perseverance, and an entire devotion of self to duty, he was soon acknowledged to be one of the most valuable officers of the Department with which his interests were inseparably bound up. He took a prominent part in each of the various branches of the operations, the triangulations, linear measurements, topography, and mathematical reductions; he completed two chains of principal triangulation of an aggregate length of nearly 300 miles, mostly over very difficult ground; he supervised the measurement of a base-line at Cape Comorin, with Colby's apparatus of compensation-bars and microscopes, and wrote a valuable paper on the probable errors of the measurement, which is printed among the Appendices to *The Account of the Operations of the Great Trigonometrical Survey of India*, Vol. i. Dehra Doon, 1870.

In 1864 Captain Basevi was selected to undertake the Pendulum Operations which were commenced at the suggestion of the President and Council of the Royal Society, for the purpose of determining the variations of the force of gravity at certain stations of the great meridional arc in India, which was measured by Colonels Lambton and Everest, and at stations on the coasts and in the interior of the British territories in Asia. The object of these operations was two-fold; first, to obtain additional data to combine with the result of similar operations in other countries for determining the figure of the Earth; and, secondly, to ascertain the magnitude of the variations which are superposed, in certain localities, on the normal increase of gravity from the equator to the poles, in order that, by comparing the force of gravity on

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high-table lands, on plains little elevated above the sea-level, and on oceanic islands, some light might be thrown on the structure of the Earth's crust.

Captain Basevi entered on this work with great ardour and devotion, sparing no pains to secure results of the utmost accuracy and precision humanly attainable. His observations of pendulum and clock coincidences were continued over at least twelve days at each station, and for ten hours daily he was never absent for more than a few minutes at a time from his pendulums, the observations recurring at every hour and a half; in the evenings two hours more were devoted to star-observations for time; and the programme of work was never deviated from with the object of curtailing it, though not unfrequently additional observations were taken. Besides this, very elaborate and laborious investigations were made for the purpose of determining the values of the coefficients of temperature and pressure, and other constants, a knowledge of which was required for the reduction of the observations.

By the spring of 1869, Captain Basevi had completed the operations on the Indian Arc, and found at the northern extremity thereof a deficiency of density as the stations approached the Himalayan Mountains, and conversely an increase of density at the southern extremity as the stations approached the ocean. These results point to a law of diminution of density under the elevated, and of increase under the depressed, parts of the Earth's surface; they were subsequently corroborated by observations on the Island of Minicoy, and at various points on the coasts of the Peninsula. Comparing these *inter se*, and with the results at the inland stations, gravity was found to be greater on the island than on the corresponding coast station, and always greater on the coasts than inland on the same parallel of latitude.

Thus far, however, no very high altitudes had been visited; arrangements were therefore made to secure the crucial test of observations at altitudes exceeding 15,000 feet on the great table-lands in the interior of the Himalayan Mountains. This would complete the work in India, after which the pendulums were to be swung at Aden and in Egypt, and finally at the Greenwich and the Kew observatories, that the operations might be combined with those of Kater, Sabine, Biot, Luetke, and Sawitsch.

In the spring of the present year Captain Basevi proceeded to the interior of the Himalayan Mountains, *viâ* Kashmir and Ladak. He completed an excellent series of observations at a point in N. lat. $33^{\circ} 16'$, and long. $77^{\circ} 54'$, on a plateau at a mean elevation of 15,500 feet above the sea-level, where the force of gravity (reduced to sea-level) was found to be only as much as the normal force in the parallel of latitude of 27° , or 6° to the south of that of the station of observation. He then proceeded through the Changchenmo Valley to a plateau nearly 17,000 feet high on the borders of the Chinese territories,

and was commencing to take observations when he died suddenly after a very short illness. His death is clearly to be attributed to the privations which he had to endure in a highly rarefied atmosphere under exposure to great severities of climate, in a barren and desolate region almost wholly devoid of every necessary of life. It is the more to be regretted in that it occurred when his work was all but completed, and he was eagerly looking forward to a return to his native land with the gratification of having satisfactorily accomplished an arduous and difficult series of operations.

He died in the prime of life, at the early age of thirty-nine years.

J. T. W.

EDWARD WILLIAM BRAYLEY* was the son of the late Edward Wedlake Brayley, well known as the author and editor of numerous topographical and antiquarian works, and for many years Librarian of the Russell Institution.

The subject of the present notice was born in London in 1801. He at the first took great interest in the studies so ardently pursued by his father, but subsequently devoted himself entirely to science, and became a student under Professor Brande, at the Royal Institution, where he made the acquaintance of Faraday and other eminent men. He also attended the lectures of Professor Millington, and attracted the attention of that distinguished philosopher, who was remarkable for the assistance he rendered his inquiring pupils. In 1824, when only twenty-three years of age, he became a Member of the Meteorological Society, and engaged in its management with Dr. Birkbeck, Mr. Luke Howard, and other distinguished cultivators of Meteorological Science. He shortly after became a lecturer on various subjects connected with science, and was closely engaged as such by the various scientific and mechanics' institutes established about that time by Dr. Birkbeck in the Metropolis and the chief towns of the kingdom. In the year 1834 the managers of the London Institution determined to engage two principal librarians, the one to take charge of the department of general literature, the other of science. Mr. R. Thomson was appointed to the former office and Mr. Brayley to the latter. He was also engaged to lecture at the Institution, and generally delivered a course of lectures on physical science during the season. He became a Fellow of various scientific and literary bodies, and joined this Society in November 1866.

On the death of Mr. Thomson, in 1865, Mr. Brayley was appointed sole principal librarian, and also Professor of Physical Geography and Meteorology to the Institution. For more than a year before his death he became subject to attacks of occasional faintness, and on the 1st of February, 1870, he expired, after twenty-four hours of severe suffering, from angina pectoris.

* This obituary notice of Mr. Brayley was received after the publication of the last Annual Report, in which it ought to have appeared.